

## **Mars Relevant Sessions Planned for Fall AGU:**

Fall AGU will be held December 11-15, 2006 in San Francisco.

### **Abstracts are due September 7, 23:59UT**

Full meeting information is available at: <http://www.agu.org/meetings/fm06/>

The following Mars-related sessions are being convened:

#### **P05: Mars Exploration Rovers: Two Martian Winters at Gusev Crater and Meridiani Planum**

By the time the 2006 AGU Fall Meeting convenes, the two Mars Exploration Rovers (MER) Spirit and Opportunity will have celebrated their second southern martian winters on the surface of Mars. The scientific results from both rovers continue to accumulate. This session seeks to gather the results directly based on MER data, and also related research that puts the regional results from the two landing sites into the wider martian context. Thus, this MER session solicits the entire Mars research community to report on geologic, geochemical, petrologic, and remote-sensing analyses of Gusev Crater and Meridiani Planum, and to report on coordinated rover and orbiter observations. Reports on MER-related terrestrial analogs, and reports on similar Martian environments to illustrate global processes are also encouraged.

Conveners: W. Bruce Banerdt ([bruce.banerdt@jpl.nasa.gov](mailto:bruce.banerdt@jpl.nasa.gov)) and Albert Haldemann ([albert.f.haldemann@jpl.nasa.gov](mailto:albert.f.haldemann@jpl.nasa.gov))

#### **P07: Mars Express: Scientific Results After Three Years in Orbit**

Scientific highlights from the seven experiments onboard the European Mars Express orbiter will be presented, in particular concerning the surface geology and mineralogy, the atmospheric dynamics, composition and climate, the interaction with the space environment, and gravity measurements by radio science. Implications for astrobiology and future Mars exploration will also be addressed.

Conveners: Agustin Chicarro ([agustin.chicarro@esa.int](mailto:agustin.chicarro@esa.int)) and Joern Helbert ([joern.helbert@dlr.de](mailto:joern.helbert@dlr.de))

### **P15: Geophysical Field Investigations of Mars Analog Environments**

Geophysical techniques are an important new tool for investigating the subsurface properties of Mars, especially with regard to understanding variations in subsurface composition, structure, stratigraphy, and the potential distribution and state of H<sub>2</sub>O. Understanding the distribution of water is an especially high priority objective of the Mars Exploration Program, providing important insights into the geologic and hydrologic evolution of the planet, potential past and present habitable environments, and the availability of a critical in situ resources for supporting future human exploration. This session explores the application of electromagnetic, seismic and other types of geophysical techniques to investigations of the subsurface properties of well-characterized terrestrial desert, volcanic and cold-climate analogs of Mars. The topics addressed will include: (1) studies of the compositional, stratigraphic, structural, and hydrologic characteristics of these analog sites over the range of radar frequencies likely to be employed by present and future spacecraft investigations of Mars (~1 MHz - 3 GHz) – especially in the lower range (~1 - 25 MHz), where the first-order characteristics of the Earth's crust are largely unexplored; (2) the potential diagnostic and interpretive synergies that can be realized from the application of multiple geophysical techniques; and (3) assessments of the real-world capabilities and limitations of spacecraft instrument prototypes. The submission of abstracts addressing these issues, and related laboratory and geophysical modeling investigations, are strongly encouraged.

Conveners: Stephen M. Clifford ([clifford@lpi.usra.edu](mailto:clifford@lpi.usra.edu)),  
Essam Heggy ([heggy@lpi.usra.edu](mailto:heggy@lpi.usra.edu)), and  
Valérie Ciarletti ([ciarletti@cetp.ipsl.fr](mailto:ciarletti@cetp.ipsl.fr))

### **P18: Instruments for in Situ Exploration of Planets: How Do They Measure Up?**

Planetary exploration missions are becoming increasingly sophisticated in their instrument capabilities, as evidenced by Cassini-Huygens, MER and the NASA MSL and ESA ExoMars selections. In this session we want to engender debate about comparison of current approaches for sample handling and instruments with their terrestrial laboratory counterparts and what future requirements and possibilities might be. We particularly solicit papers addressing the difficulties encountered in maintaining the chemical and structural integrity of surface and sub-surface samples containing

hydrated minerals and/or with trace organic contents. Sub part per billion levels of organic compounds especially pose problems in controlling contamination and meeting Planetary Protection requirements. We would also encourage some contributions defining which scientific objectives cannot be achieved by in situ methods and therefore must wait for sample-return missions. Papers can relate to any planetary object. Any contributions on topics in these areas will be welcomed from both the planetary and terrestrial geoscience communities.

Conveners: Max Coleman ([max.coleman@jpl.nasa.gov](mailto:max.coleman@jpl.nasa.gov)), Frank Grunthaner ([Frank.J.Grunthaner@jpl.nasa.gov](mailto:Frank.J.Grunthaner@jpl.nasa.gov)), Pascale Ehrenfreund ([p.ehrenfreund@chem.leidenuniv.nl](mailto:p.ehrenfreund@chem.leidenuniv.nl)), and Angioletta Coradini ([angioletta.coradini@ifs.rm.cnr.it](mailto:angioletta.coradini@ifs.rm.cnr.it))

### **P19: The Remotely Sensed Mineralogy of Mars**

This session is broadly focused on discussion of martian surface composition as measured by both in-situ and remote techniques. Laboratory studies that are relevant to martian surface mineralogy and integrate or provide a foundation for interpreting data returned by past and current Mars missions are welcome.

A number of planetary missions over the past decade, including Mars Global Surveyor, Mars Pathfinder, Mars Odyssey, Mars Express, the Mars Exploration Rovers and Mars Reconnaissance Orbiter, have carried instruments capable of characterizing and quantifying the mineralogy of the martian surface over multiple spatial and temporal scales. These missions have utilized numerous instruments and techniques to provide both direct and indirect information regarding the chemistry and geology of the surface on local, regional, and global scales. Through invited and submitted contributions this session will help to integrate the results from this wealth of measurements and help to unravel the mysteries of the geological history of Mars. The mineralogical knowledge gained from observational and experimental approaches will continue to provide a key role in determining future landing sites and instrumentation for further Mars exploration.

Conveners: Ralph E. Milliken ([ralph\\_milliken@mac.com](mailto:ralph_milliken@mac.com)) and Deanne Rogers ([drogers@gps.caltech.edu](mailto:drogers@gps.caltech.edu))

## **P20: The Mars Reconnaissance Orbiter: A New Look at Mars**

Launched in August 2005, the Mars Reconnaissance Orbiter (MRO) has recently finished its aerobraking phase and will begin (in November, 2006) its primary science phase, a two-year suite of global mapping, regional survey, and very-high resolution targeting of key locales. The eight scientific investigations selected by NASA for MRO will characterize the present atmosphere and climate, search the surface for morphological and compositional evidence characterizing past climates and climate change, and will probe subsurface structure and volatile composition. Whether viewing the atmosphere, surface or subsurface, the six MRO science instruments will observe with significantly improved spatial resolution over previous missions. Historically, such advances have revealed a “new” Mars, resolving some mysteries while discovering new phenomena that have challenged our understanding and provided new insights into comparative planetology. The accommodation of a diverse payload, the need to routinely target, and the necessity of returning an order of magnitude more data than previous deep space missions were the principal drivers of the spacecraft development and the mission design. In this session the mission’s Principal Investigators and Team Leaders will present early returns from MRO, as it begins a new look at the Red Planet. Conveners: Richard W. Zurek ([rzurek@jpl.nasa.gov](mailto:rzurek@jpl.nasa.gov)) and Suzanne E. Smrekar ([ssmrekar@jpl.nasa.gov](mailto:ssmrekar@jpl.nasa.gov))

Information submitted by:

Wendy Calvin, University of Nevada/Reno, ([wcalvin@unr.edu](mailto:wcalvin@unr.edu))